WILDLIFE MANAGEMENT UNIT 15 - HENRY MOUNTAINS

Boundary Description

Garfield and Wayne Counties - Boundary begins in Hanksville at the junction of SR-24 and SR-95; south on SR-95 to Lake Powell; south along the west shore of Lake Powell to SR-276 at Bullfrog; north along SR-276 from Bullfrog to Notom Road; north along this road to SR-24; east on SR-24 to Hanksville.

Herd Unit Description

RANGE AREA AND OWNERSHIP*

	Summer Range		Winter Range	
Ownership	Area (acres)	%	Area (acres)	%
Bureau of Land Management	12,128	81	218,106	88
Private	788	5	4,115	2
State	2,050	14	25,424	10
Total	14,966		247,645	

*1998 Utah Big Game Management Plan

The Henry Mountains lie between the waterpocket fold on the west and the canyon of the Colorado River to the east. The mountain peaks are the result of vertical intrusives of igneous rock that have penetrated from a broad basin into the sedimentary strata (Stokes 1986). The majority of the mountain rises gently upward to these peaks; which are (from north to south) Mt. Ellen (11,615 feet), Mt. Pennell (11,371 feet), Mt. Hillars (10,650 feet), Mt. Holmes (7,930 feet) and Mt. Ellsworth (8,235 feet).

A literature review done by Nelson (1965) on the history of ungulate use on the Henry Mountains reveals that livestock grazing began with cattle in 1878. Cattle numbers increased substantially in the 1890's. Sheep were introduced prior to 1890, but the large herds did not appear until after 1900. Livestock numbers increased sharply in response to World War I; by 1925, sheep had largely replaced cattle.

Big game utilizing the mountain consist of deer and buffalo. Occasional reports of elk sightings would indicate that perhaps a few descendants of a 1950 transplant (15 animals) may still be on the mountain or animals are coming from the eastern side of the Boulder Mountains.

Buffalo obtained from Yellowstone National Park were released near Robber's Roost Ranch north of the Dirty Devil River on the San Rafael Desert in 1941 (Nelson 1965). An additional release of five bulls was made in 1942 to replace those that scattered to the north. The buffalo left the San Rafael Desert in 1942 and most crossed the Dirty Devil River to the south and went onto the Burr Desert. Following a roundup and testing for brucellosis in 1963, the buffalo shifted their winter range from the Burr Desert to the foothills on the west side of the Henry Mountains. The buffalo continued to use the Henry Mountains during the other seasons. Buffalo have increased gradually since the initial transplant and have been hunted fairly consistently since 1960 (with the exception of 1964, 1965, 1972, and 1973). The population is currently managed for 285 adult and yearling animals post-season (BLM & DWR Cooperative Agreement).

The BLM allocated 2,088 AUMs on 13 allotments (including Dry Lake which is an unallotted area for livestock, but reserved for use by buffalo) in the 1984 grazing EIS, which was 242 AUMs short of that needed to accommodate the agreed upon number of 200 yearling and older animals. A portion of the 94 AUM shortage on the Steele Butte Allotment has been offset by revegetation efforts on state land east of Cave Flat

(375 acres in 1983). The shortage in Dry Lake (102 AUMs) will be difficult to offset since this area is designated a Wilderness Study Area and may be exempt from future revegetation efforts. The Utah Division of Wildlife Resources has recently purchased enough AUM's for 285 buffalo and their calves.

The thirteen trend studies established in 1987 lie within the four livestock grazing allotments shown in Table 3. These four allotments account for 80% of the forage allocation (AUMs) for buffalo under the preferred alternative presented in the 1984 Henry Mountain Grazing EIS. Actual use estimated prior to 1984, presented in the EIS, showed these same allotments providing 76% of the AUMs for the herd.

Information regarding livestock use for 1985 and 1986 (stocking rate, grazing season and season of use) is summarized for each of the allotments in Table 3. All of the summer allotments, except the Pennell permittee who has taken non-use, have been converted to cattle.

Since the 1960's, approximately 6,700 acres have been converted from pinyon-juniper woodland to a more productive grass-shrub type. The breakdown of acres treated in the four allotments is presented in Table 3. Treatments done in these allotments represent 80% of that done in the Resource Area. Young pinyon and juniper trees have reoccupied most of the treated areas through release and/or invasion and are beginning to impact forage production. The Henry Mountains Coordinated Resource Management Plan (HMCRMP) Environmental Assessment (EA) addresses the need to maintain these treated areas to reduce tree density. Approximately 4,300 acres have been scheduled for retreatment by means of either prescribed burning or roller-chopping. Approximately 8,300 acres are currently being proposed as new treatments. Excluded from consideration for range improvements are the several wilderness study areas that have been identified within the HMCRM area.

The key areas that were selected to be monitored are associated primarily with the pinyon-juniper chaining and revegetation treatments. The exceptions are other areas that are frequently used by buffalo and mule deer. The studies were located in areas where deer and/or buffalo "have demonstrated a definite pattern of use during normal climate conditions over a long period" (from Interagency Range Trend Study Guidelines, 1983).

Herd Unit Management Objectives

The deer herd management objectives for the unit are identified in the deer herd unit management plan (Inglet, 1983). The management plan identified six areas that are critical deer winter ranges; Apple Brush Bench, Eagle Bench, Horn Mountain, Coyote Bench, Cave Flat, and Sidehill Spring. According to Inglet (1983), deer herd numbers are well below carrying capacity and only light to moderate use is being made of these areas. The short-term management objective is to harvest 300 buck deer annually on a sustained yield basis (Jensen, 1993). The long-term objective is to manage for maximum deer herd size and productivity while maintaining the herd within the carrying capacity of the range.

The Henry Mountain deer herd has been designated as a buck only trophy hunt area with antler restrictions since 1977. The harvests, between 1988 and 1993 have averaged 181 bucks/year with a hunter success rate of 27%. A high of 295 bucks were harvested during the 1990 season. Only 85 bucks were harvested during the 1992 season with only 181 bucks taken from the unit in 1993.

Data from pellet-group transects indicate a decline from a high of 59 deer days use/ha in 1988-89 and 1989-90 to a low of only 27 by 1993-94. During the 1996-1997 season, the last year data is available, deer days use/ha dropped again to less than 5 (Evans 1997). Likewise, fawn doe ratios have declined from a high of 71 fawns/100 does in 1988-89 to a low of only 40 during the 1994-95 season (Shields et al. 1995). Fawn/doe ratios increased again in 1997-98 to 64, and to 103 in 1998-99. The decline in the early part of the 1990's is likely due to the winter losses of 1992-1993 and the severe drought conditions which have occurred during this decade. The Henry Mountains management unit was closed to deer hunting beginning in 1996 and is scheduled to open again in 2000.

The buffalo herd is healthy and increasing. Between 1988 and 1993, 212 bulls and 171 cow buffalo were harvested from the unit. The herd has been steadily increasing in number in spite of the prolonged drought conditions. By 1990, there were an estimated 559 animals. Due to severe drought conditions of that year, 103 cow permits were issued in order to reduce the herd. During the 1991-92 census, there were approximately 426 buffalo. That number remained fairly constant through 1994 when 474 buffalo were on the unit. The trend for calves/100 cows has averaged 33 from 1992-93 through 1996-97. The 1997-98 estimate was 25 calves/100 cows, and the 1998-99 estimate was 35 calves/100 cows. The current buffalo population is estimated at 460 animals.

TABLE 3

FORAGE ALLOCATION, USE AND GRAZING PROGRAMS

	Allotments			
	Crescent Creek	Nasty Flat	Pennell	Steele Butte
Acres	9,703	17,341	63,254	83,443
Big Game Use (AUMs) Buffalo	65[1] (55)	685 (576)	952 (830)	202 (202)
Deer	81	71	205	112
Livestock Grazing	2 Allotment	None	3 Pasture Rotation	Study Area Rested
Active Preference (AUMs)	332	474	2,594	5,034
Average Licensed Use (AUMs)	333	468	1,960	2,672
Forage Available (SVIM)	187	399	2,560	1,874
Forage Available (Studies)	312	385	1,558	----
Grazing Period	6/1-9/15	6/1-9/30	6/1-10/31	10/10-5/31
Stocking Rate	111	120	530	Study Area Rested
Seeded Acres[2]	877	1,081	2,780	628

[1]AUMs determined to be available for buffalo shown in parentheses (BLM EIS 1983)
[2]Acres seeded prior to 1984

SUMMARY

DEER HERD UNIT 15(38) - HENRY MOUNTAINS

Lower elevation winter range transects include Eagle Bench (#1), Cave Flat Chaining (#9), and Cave Flat (#10). Browse trend is stable on Eagle Bench, down on Cave Flat Chaining due to the dominance of broom snakeweed, and up on Cave Flat with sagebrush showing improved vigor, decreased decadency, and good recruitment from young plants. Herbaceous trend is improving on Eagle Bench with perennial species increasing in nested frequency, stable on Cave Flat Chaining although the understory is depleted, and down on Cave Flat with the expansion of cheatgrass. Soil trends on all these sites are stable at this time.

Pinyon-juniper chaining projects make up a large portion of spring and summer range for deer and buffalo on the unit. Five study sites occur in these treatments. They include: South Creek Chaining (#4), Bates Knob (#5), Box Springs Chaining (#6), Airplane Spring (#7), and Quaking Aspen Spring (#12). The most important vegetational aspect of these treatments is the herbaceous understory. All of the chainings in this herd unit showed stable trends for the herbaceous component. Soil trends on all sites are stable with the exception of South Creek Chaining, which has a downward trend due to the decrease in protective ground cover. Browse trends are mixed within the chainings. Two sites, Bates Knob and Airplane Spring show improved browse conditions. Two other sites, South Creek and Box Springs have browse trends that are down. The increase in green rubber rabbitbrush at South Creek and the heavy use and lack of recruitment on bitterbrush at Box Springs are the causes for downward browse trends at these sites. Quaking Aspen Spring has a stable browse trend.

Other summer range sites which occur outside of pinyon-juniper treatments include a pinyon-juniper woodland which is proposed for treatment (Garden Basin #8), a mountain big sagebrush flat (Sidehill Spring #13), two mixed mountain brush sites (Dugout #3 and Above Coyote Bench #11), and one aspen area (Nasty Flat #2). The proposed chaining treatment area at Garden Basin has a stable soil trend although the soil is in poor condition. Trend for browse is down, and the herbaceous understory is stable but severely lacking. This trend study should be discontinued if the chaining treatment is not conducted before the next reading. Sidehill Spring displays stable soil and browse trends and a downward herbaceous trend as cheatgrass dominates the understory and perennial species decreased in nested frequency. This site contains a dense stand of sagebrush and rabbitbrush and would benefit from a treatment to thin these shrubs. The mixed mountain brush site at Dugout has stable trends for all categories. The site at Above Coyote Bench has a stable browse and soil trend but downward trend for the herbaceous understory due to herbaceous perennial species decreasing in nested frequency and cheatgrass increasing in nested frequency. The aspen site at Nasty Flat occurs in a mature aspen stand with little browse. The baseline was relocated closer to the edge of the clone in 1999 to better sample aspen regeneration. Trends are stable for all categories at this site.

Site	Category	1994	1999
15-1 Eagle Bench	soil	0/-	0
	browse	0	0
	herbaceous understory	-	+
15-2 Nasty Flat	soil	0	0
	browse	0	0
	herbaceous understory	0	0

Site	Category	1994	1999
15-3 Dugout	soil	0	0
	browse	0	0
	herbaceous understory	0	0
15-4 South Creek Chaining	soil	+	-
	browse	-	-
	herbaceous understory	0	0
15-5 Bates Knob	soil	0	0
	browse	-	+
	herbaceous understory	-	0
15-6 Box Springs Chaining	soil	0	0
	browse	0	-
	herbaceous understory	0/-	0
15-7 Airplane Spring	soil	0	0
	browse	+	+
	herbaceous understory	-	0
15-8 Garden Basin	soil	0/-	0
	browse	-	-
	herbaceous understory	0	0
15-9 Cave Flat Chaining	soil	+	0
	browse	-	-
	herbaceous understory	0	0
15-10 Cave Flat	soil	+	0
	browse	0	+
	herbaceous understory	-	-

Site	Category	1994	1999
15-11 Above Coyote Bench	soil	-	0
	browse	0	0
	herbaceous understory	-	-
15-12 Quaking Aspen Spring	soil	0	0
	browse	0	0
	herbaceous understory	-	0
15-13 Sidehill Spring	soil	0	0
	browse	0	0
	herbaceous understory	+	-

(0) = stable, (+) = up, (-) = down, (0/+) = stable to up, (0/-) = stable to down